

Please check the examination details below before entering your candidate information

Candidate surname

Other names

Centre Number

Learner Registration Number

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**Pearson BTEC Level 3 Nationals Extended Certificate,
Foundation Diploma, Diploma, Extended Diploma**

Friday 12 January 2024

Morning (Time: 2 hours)

Paper
reference

31760H

Information Technology

UNIT 1: Information Technology Systems

You do not need any other materials.

Total Marks

Instructions

- Use **black** ink or ball-point pen.
- **Fill in the boxes** at the top of this page with your name, centre number and learner registration number.
- Answer **all** questions.
- Answer the questions in the spaces provided
 - *there may be more space than you need.*

Information

- The total mark for this paper is 90.
- The marks for **each** question are shown in brackets
 - *use this as a guide as to how much time to spend on each question.*

Advice

- Read each question carefully before you start to answer it.
- Try to answer every question.
- Check your answers if you have time at the end.

Turn over ►

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Answer ALL questions. Write your answers in the spaces provided.

1 JRC is a theatre company that uses IT systems.

(a) The Health and Safety (Display Screen Equipment) regulation is one piece of legislation used to protect users and data when using IT systems.

(i) Give **two other** pieces of legislation that JRC should consider when using IT systems.

(2)

1

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(ii) Explain **two** ways to reduce health and safety issues when using IT systems.

(4)

1

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(b) JRC captures customer data to use for targeted online marketing.

Explain **two** methods of targeted online marketing.

(4)

(c) Customers can use the JRC website to book tickets for shows.

When viewing stored card information the card number is partially replaced by asterisks.

***** 7654

Explain **one** reason why the card number is displayed as asterisks.

(2)

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(d) JRC has decided to use e-ticketing rather than printing paper tickets.

Explain **two** benefits to JRC of using e-tickets.

(4)

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(e) Discuss the benefits and drawbacks to the customer of purchasing tickets online.

(8)

(Total for Question 1 = 24 marks)



2 Poppy is a long-distance runner. She is preparing to compete in the world championships.

(a) Poppy uses a smartwatch to monitor her heart rate when running. She uses wireless connectivity to transfer the data from her heart monitor to her tablet computer.

(i) Explain **two** benefits to Poppy of using wireless connectivity to transfer data from her heart monitor to her tablet computer.

(4)

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(ii) Explain **two** threats to the data stored on Poppy's tablet computer.

(4)

1

2



P 7 5 7 9 8 A 0 7 2 4

(b) Poppy sends data from her tablet computer to her coaching team. The data is encrypted to ensure it is secure.

Describe how encryption works to keep the data secure during transmission.

(4)



(c) Poppy connects her tablet computer to her other devices using a personal area network (PAN).

Explain **two** reasons why Poppy would use a PAN to connect her devices.

(4)

1

2



P 7 5 7 9 8 A 0 9 2 4

(d) Poppy's coaching team needs to keep track of her location when she is running.

They do this using a global positioning system (GPS) tracking device.

Location is one example of information that can be calculated using GPS.

Discuss **other** examples of information that can be calculated using GPS.

(6)

(Total for Question 2 = 22 marks)



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QUESTION 3 BEGINS ON THE NEXT PAGE.



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3 A motor vehicle garage provides services and MOTs.

The garage has a small reception area.

The reception area includes a:

- wireless laptop
- database server to store customer, service and MOT records
- card reader for customers to make secure payments
- printer for any paper invoices.

(a) Draw a diagram to show the integration of systems used in the garage.

The diagram should include devices and systems that are used, including:

- laptop
- database server
- card reader
- printer
- internet access
- connection type(s)
- annotations.



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Use this space to draw your diagram for Q3a.

(6)



(b) The card reader allows contactless payments so customers can pay by card or smartphone.

(i) Explain **two** benefits to the customer of making contactless payments.

(4)

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(ii) The owner is considering introducing a self check-in system for customers to use when arriving at the garage.

Explain **two** characteristics that need to be considered when designing the user interface for the self check-in system.

(4)

1

2



(c) The garage stores all data on a database server. The owner is concerned there is no backup if the server fails.

The owner is considering moving all the data to an online storage system.

Discuss factors that affect the use and selection of online systems for storing data.

(8)



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(Total for Question 3 = 22 marks)



4 A large advertising company is considering upgrading its network operating system.

The company will need to purchase new software licences for the upgrade.

(a) Discuss the factors that the company will need to consider before deciding to upgrade its network operating system.

You should consider:

- costs, other than licences
- implementation
- training
- compatibility
- support.

(10)



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(b) The advertising company uses computers. Computers can have a significant impact on the environment.

Analyse ways the company and the staff can reduce the impact of company computers on the environment.

(12)

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(Total for Question 4 = 22 marks)

TOTAL FOR PAPER = 90 MARKS



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